












Date: Tuesday, 3/20/2007 1:51:51 PM  
 User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: AFT CROSSTUBE
Job Number	: 31370		
Estimate Number	: 10377		
P.O. Number	: N/A	Part Number	: D2890
This Issue	: 3/20/2007	S.O. No.	: N/A
Prsht Rev.	: NC	Drawing Number	: D2890 REV B
First Issue	: N/A	Project Number	: N/A
Previous Run	: 31369	Drawing Revision	: B
	Type : PURCHASED PARTS	Material	: N/A
Written By	: <u>                    </u>	Due Date	: 4/10/2007
Checked & Approved By	: <u>                    </u>	Qty:	1 Um: Each
Comment	: Est. D 05.03.21 Removed Bending procedures KJ/JLM		
Additional Product			
Job Number: 			
Seq. #:	Machine Or Operation:	Description :	
1.0	D6008180	Crosstube extrusion	
			
Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)			
Pick:			
Qty	Part #	Description	Batch
1	D6008-180	Crosstube extrusion	25667
EL 7/4/9			
2.0	BENDING	BENDING MACHINE	
			
Comment: BENDING MACHINE			
1-Bend D2890 as per Dwg D2890 and Folio FT002			
3.0	QC6	DIMENSIONAL CHECK	
			
Comment: DIMENSIONAL CHECK			
4.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1	
			
Comment: LANDING GEAR RESOURCE 1			
1-Deburr and Polish			
5.0	HAND FINISHING1	HAND FINISHING RESOURCE #1	
			
Comment: HAND FINISHING RESOURCE #1			
Chemical Conversion Coat as per QSI 005 4.1			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: ☒ Date: 07/05/14

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 3/20/2007 1:51:51 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: AFT CROSSTUBE

Job Number: 31370

Part Number: D2890

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



N/A

Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

7.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: W/O 313 79

2004.11

8.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

507105/14

Job Completion



u 27 Apr 12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector





Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

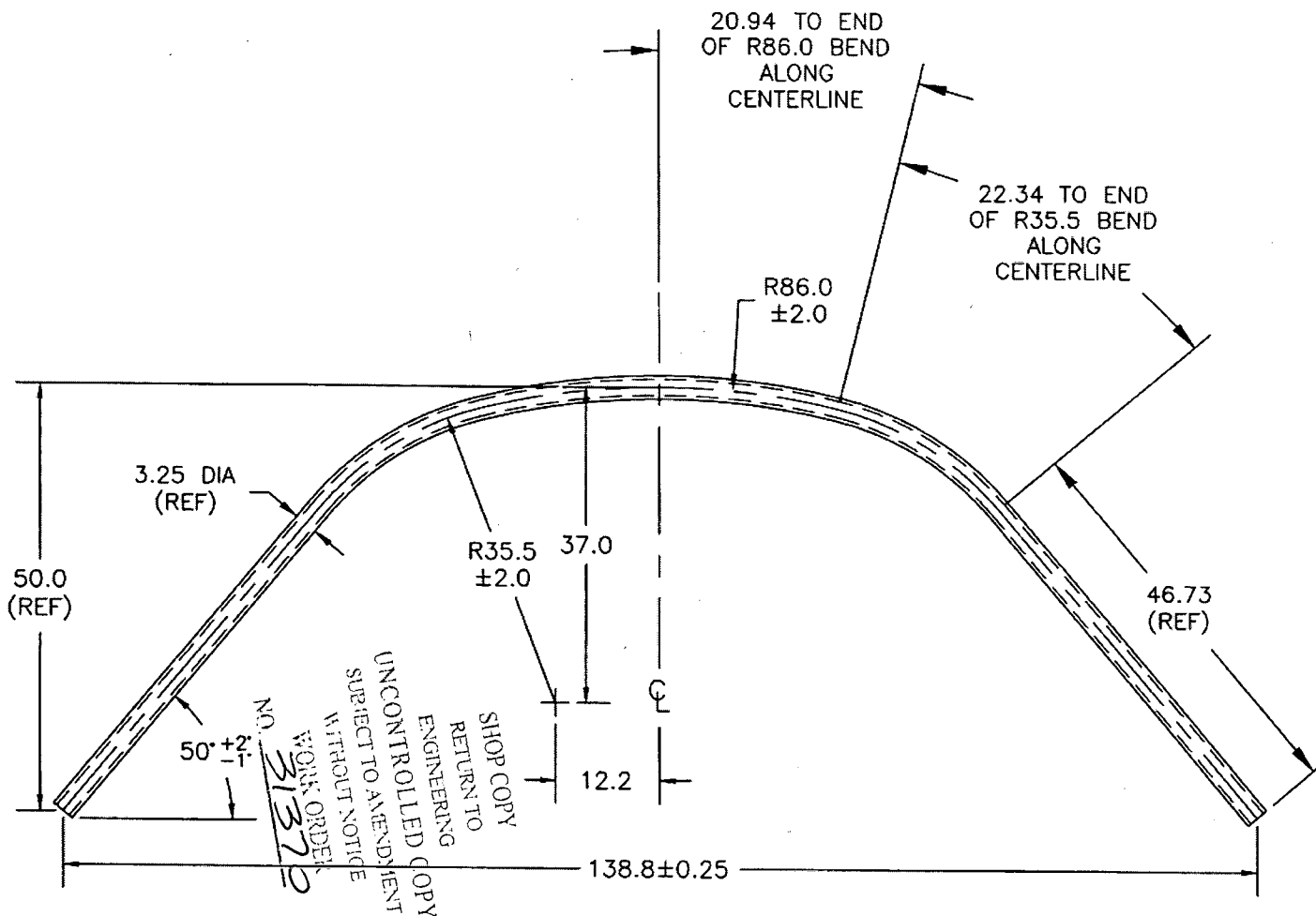
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN 		DRAWN BY 		<b>DART AEROSPACE LTD</b> HAMKESBURY, ONTARIO, CANADA		REV. B	
CHECKED 	APPROVED 	DRAWING NO. D2890		SHEET 1 OF 1			
DATE 02.10.18		TITLE AFT CROSSTUBE		SCALE 1:20			
A	99.05.21	NEW ISSUE					
B	02.10.18	ADD TANGENT LENGTHS; CHANGE NOTES					

02-10-28



## NOTES

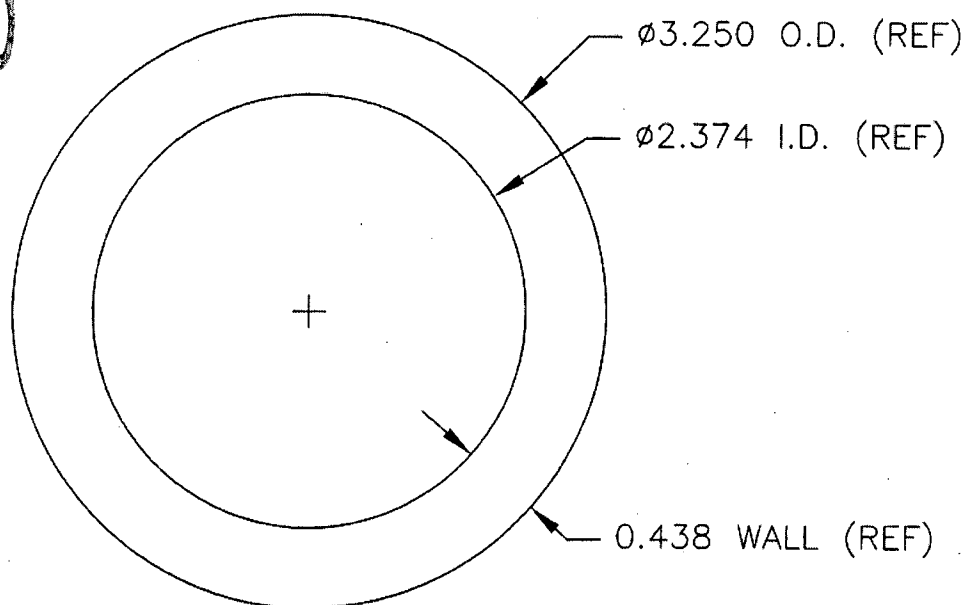
- 1) MATERIAL: MANUFACTURE FROM D6008-180 ( $\phi 3.25$  OD x 0.438 WALL)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) PART IS SYMMETRIC ABOUT CENTERLINE
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) BEND PROGRESSIVELY WITH MINIMUM OF 3 PASSES
- 6) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>A</i>	APPROVED <i>A</i>	DRAWING NO. D6008	REV. A SHEET 1 OF 1
DATE 00.11.17		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.17	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

RELEASED  
00.11.24 *A*



### NOTES

- 1) D6008-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 180" LONG TUBE: D6008-180

- 2) MATERIAL: 3.250 OD x 0.438 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.008$  MEAN ( $\pm 0.016$  INCLUDING OVALITY)  
WALL:  $\pm 0.020$  MEAN ( $\pm 0.044$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.125/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

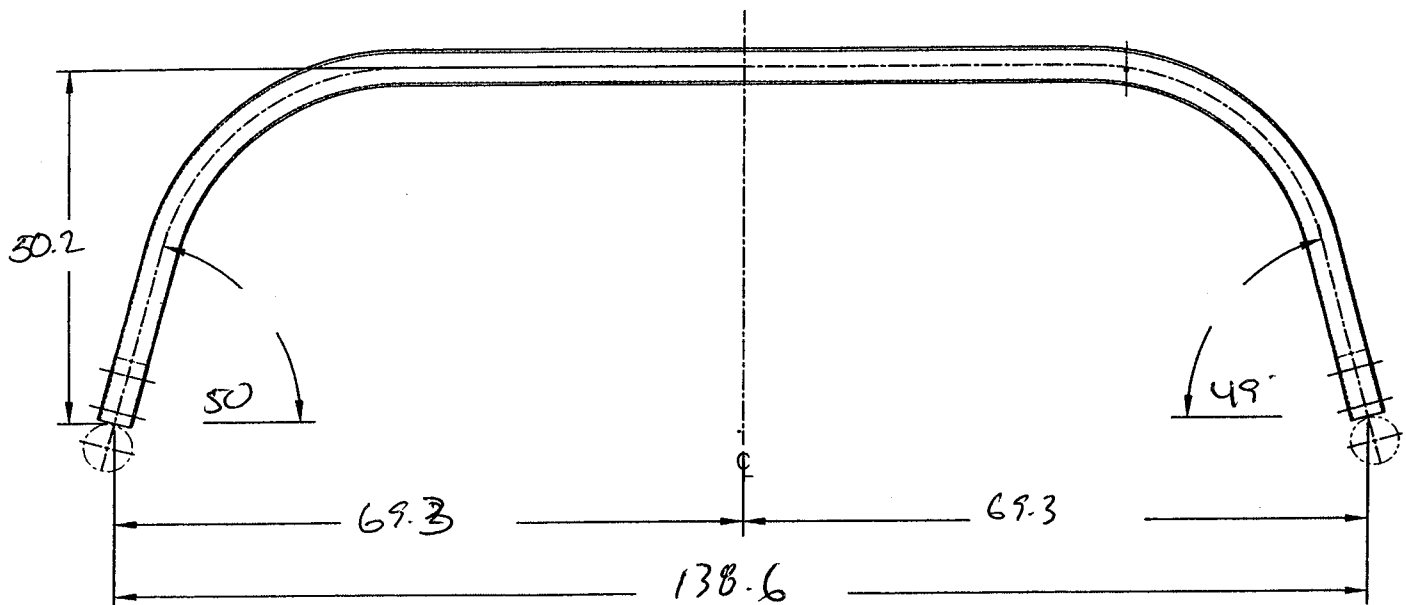
WORK COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 31370

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<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	31370
<b>Description:</b> Crosstube Aft		<b>Part Number:</b>	D2890
<b>Inspection Dwg:</b> D2890 <b>Rev:</b> B		<b>Page 1 of 1</b>	

Required Dimension	Min	Max
Height	49.875	50.125
1/2 Span	69.275	69.525
Angle	49	52
Total Span	138.55	139.05



Comments
Tube used: CU + Fe D205-596-107 B31379

QC15 Inspection	<i>[Signature]</i>
Date	070411

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	